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**Title :** A Cost-Benefit Analysis for Territorial Male Sea Otters in Prince William Sound, Alaska

**Category :** Behavior

**Student :** M.A./M.S.

**Preferred Format :** Either Oral or Poster Presentation

**Abstract :** The purpose of this study was to examine the costs and benefits endured by territorial male sea otters (*Enhydra lutris*). The cost of maintaining a territory is the reduction in time available for body maintenance activities such as resting, feeding, and grooming, because more time must be devoted to territory maintenance activities such as patrolling and interacting. The benefit is increased access to females and eventual mating success. An understanding of this cost-benefit exchange at the individual level is important in understanding sea otter mating strategies. Territorial males were observed during focal follows in Simpson Bay, Prince William Sound, Alaska, during the summer of 2002. Photo-identification was used to recognize individuals based upon unique nose scar patterns. Costs and benefits were analyzed by determining if variation existed between males in terms of activity bout length and number of bouts within each activity. Territory quality was assessed according to size, amount of shoreline, accessibility to females, and number of individuals feeding within each territory. Results indicate that low costs are associated with low benefits. The otter which had more bouts of body-maintenance activities and fewer bouts of territory-maintenance activities also interacted with the fewest number of females and had the poorest quality territory. Unexpectedly, high benefits were not associated with high costs. The male which interacted with the most females and had the highest quality territory did not show a reduction in the number of body-maintenance bouts (medium-cost high-benefit); whereas the male which had the fewest body-maintenance bouts and the most territory-maintenance bouts did not interact with the most females and had a poor quality territory (high-cost medium-benefit). These intermediate cost-benefit situations suggest that males which hold high quality territories are able to attain high benefits without enduring increased costs.